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EXAMINER

HSU, JONI

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2628

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Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/807,297	Applicant(s) HATTORI, HIROSHI	
	Examiner Joni Hsu	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4464 4-7-04</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on April 4, 2004 was filed after the mailing date of the application on March 24, 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8, 14, 15, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (US006359695B1).

5. With regard to Claim 1, Takahashi discloses an image processing device for creating, based on a drawing command (*instructions about the second image data*, Col. 3, lines 10-21), drawing data to be used for forming an image while scanning in a main scanning direction (Col. 8, lines 38-40), the image processing device comprising storage means prestored with a predetermined first reference value (*designation means may designate the size of the second image data*, Col. 3, lines 6-10; Col. 4, lines 20-28; Col. 12, lines 10-18); command receiving means for receiving drawing commands in succession (*receives the instruction about the second image data*, Col. 3, lines 10-21); graphic determination means for determining whether or not a graphic pattern to be drawn by each drawing command has a predetermined shape (*logotype*, Col. 12, lines 7-9); graphic width determination means for determining, when the graphic determination means determines that the graphic pattern has the predetermined shape, whether or not a width of the graphic pattern in a main scanning direction is less than or equal to the first reference value (*size designation may be performed in such a manner that 512 pixels or less can be designated in the direction X*, Col. 12, lines 10-18; *determine whether or not the address exceeds the size of the basic image*, Col. 23, lines 45-60); graphic pattern determination means for holding the drawing command when the graphic width determination means determines that the width of the corresponding graphic pattern is less than or equal to the first reference value, and determining, when the graphic pattern determination means holds a plurality of drawing commands, whether or not the graphic patterns indicated by the plurality of drawing commands constitute an array pattern (*if one basic image 300A and a succeeding basic image 300b are deviated from each other in terms of the pattern continuity*, Col. 12, lines 51-65), in which the corresponding graphic patterns are arranged consecutively in the main scanning direction (*basic*

image 300 is printed out in such a manner that it is periodically repeated in the direction X, Col. 22, lines 1-6); command conversion means for converting, when the graphic pattern determination means determines that the plurality of graphic patterns indicated by the plurality of drawing commands constitute the array pattern, the plurality of drawing commands into one or more secondary drawing command to draw one or more secondary graphic pattern, the one or more secondary graphic pattern being defined by combining the plurality of graphic patterns together in the main scanning direction; and drawing data generation means for generating, based on the one or more secondary drawing command, drawing data to be used for forming the one or more secondary graphic pattern while scanning in the main scanning direction (if one basic image 300A and a succeeding basic image 300b are deviated from each other in terms of the pattern continuity, then a movement for each block is performed so that the pattern continuity is kept as shown in FIG. 47B, Col. 12, lines 56-65; basic image 300 is printed out in such a manner that the basic image 300 is rotated, Col. 22, lines 14-24).

6. With regard to Claim 2, Takahashi discloses that the command conversion means converts, when the graphic pattern determination means determines that the plurality of graphic patterns constitute the array pattern (Col. 12, lines 51-65), the plurality of drawing commands into the one or more secondary drawing command to draw the one or more secondary graphic pattern, each secondary drawing command being for drawing a corresponding secondary graphic pattern by repeatedly drawing, in an auxiliary scanning direction, a predetermined number of scan line that extends in the main scanning direction, the auxiliary scanning direction extending substantially perpendicularly to the main scanning direction (Col. 22, lines 14-24).

7. With regard to Claim 3, Takahashi discloses a memory for storing the drawing data, wherein the drawing data generation means generates the drawing data and transfers the generated drawing data between the drawing data generation means and the memory in a transfer condition, the first reference value being previously determined dependently on the transfer condition (*designation means may designate the size of the second image data*, Col. 3, lines 6-10, 48-67; *receiving image data supplied from the external equipment and storing the image data; designating an output format of the stored image data; and repeatedly outputting the stored image data in accordance with the output format*, Col. 4, lines 20-28; Col. 12, lines 10-18).

8. With regard to Claim 4, Takahashi discloses that the predetermined shape is a rectangle, as shown in Figure 24 (Col. 22, lines 1-24).

9. With regard to Claim 5, Takahashi discloses image forming means for forming an image on a recording medium based on the drawing data (*means for subjecting the first image data to an image process prior to transmitting the first image data to the recording head*, Col. 3, lines 22-30) while scanning in the main scanning direction (Col. 8, lines 38-40).

10. With regard to Claim 6, Takahashi discloses that the storage means is also prestored with a predetermined second reference value (512 pixels) that is greater than the first reference value (1 pixel), and wherein each secondary graphic pattern has a width in the main scanning direction that is larger than the first reference value and that is smaller than or equal to the second

reference value (*size designation may be performed in such a manner that 512 pixels or less can be designated in the direction X, one pixel is a unit*, Col. 12, lines 10-22; Col. 23, lines 45-60).

11. With regard to Claim 7, Takahashi discloses a memory for storing the drawing data, wherein the drawing data generation means generates the drawing data and transfers the generated drawing data between the drawing data generation means and the memory in a transfer condition, the first reference value and the second reference value being previously determined dependently on the transfer condition (Col. 3, lines 6-10, 48-67; Col. 4, lines 20-28; Col. 12, lines 10-22).

12. With regard to Claim 8, Takahashi discloses determining whether or not to convert the data (Col. 28, lines 37-58). Data is only converted when the plurality of graphic patterns indicated by the plurality of drawing commands constitute an array pattern (Col. 3, lines 51-67). Therefore, Takahashi discloses that when the graphic pattern determination means determines that the plurality of graphic patterns indicated by the plurality of drawing commands fail to constitute an array pattern, the command conversion means fails to convert the plurality of drawing commands, and further comprising a main storage device having an intermediate drawing command storage area and a drawing data storage area, the intermediate drawing command storage area being for storing, as intermediate drawing commands, the secondary drawing command that is produced by the command conversion means when the command conversion means converts the drawing commands into the secondary drawing command, and the drawing command when the command conversion means fails to convert the drawing

command, the drawing data storage area being for storing the drawing data produced by the drawing data generation means (Col. 28, lines 37-58; Col. 3, lines 51-67).

13. With regard to Claim 14, Takahashi discloses that the drawing data generation means accesses each storage portion in the drawing data storage area of the main storage device by designating a row address (Y-directional address) and a column address (X-directional address) of the each storage portion, the drawing data generation means successively accessing storage portions in one page's worth of storage area with a single row address in the drawing data storage area by successively designating column addresses without addressing the corresponding row address, and wherein the first reference value is previously determined dependently on a data amount corresponding to a length of the one page's worth of storage area (Col. 23, lines 45-60; *when HSYNC is raised, the count of the output (XADRA) is increased one by one, when the value of the XADRA reaches "Xb" (the X-directional length of the basic image), the X-address generator 837 clears its output address (XADRA) to "0"*, Col. 24, lines 56-65; *when HSYNC has been first-transmitted, the aforesaid operation is repeated, as a result, the count of the Y-address generator 838 is successively increased*, Col. 25, lines 32-42).

14. With regard to Claim 15, Takahashi discloses that the storage means is also prestored with a predetermined second reference value that is greater than the first reference value, and wherein each secondary graphic pattern has a width in the main scanning direction that is larger than the first reference value and that is smaller than or equal to the second reference value, the second reference value being smaller than or equal to a width corresponding to the length of the

one page's worth of storage area (Col. 12, lines 10-22; *determine whether or not the address exceeds the size of the overall output image*, Col. 23, lines 45-60).

15. With regard to Claim 20, Takahashi discloses an image processing device for creating, based on a drawing command (Col. 3, lines 10-21), drawing data to be used for forming an image while scanning in a main scanning direction (Col. 8, lines 38-40), the image processing device comprising a storage portion prestored with a predetermined first reference value (Col. 3, lines 6-10; Col. 4, lines 20-28; Col. 12, lines 10-18); a memory (Col. 9, lines 38-40); and a controller that receives drawing commands in succession (Col. 3, lines 10-21), that determines whether or not a graphic pattern to be drawn by each drawing command has a predetermined shape (Col. 12, lines 7-9), that determines, when the graphic pattern has a predetermined shape, whether or not a width of the graphic pattern in a main scanning direction is less than or equal to the first reference value (Col. 12, lines 10-18; Col. 23, lines 45-60), that holds in the memory the drawing command when the width of the corresponding graphic pattern is less than or equal to the first reference value, that determines, when a plurality of drawing commands are held in the memory, whether or not the graphic patterns indicated by the plurality of drawing commands constitute an array pattern (Col. 12, lines 51-65), in which the corresponding graphic patterns are arranged consecutively in the main scanning direction (Col. 22, lines 1-6), that converts, when the plurality of graphic patterns indicated by the plurality of drawing commands constitute the array pattern, the plurality of drawing commands into one or more secondary drawing command to draw one or more secondary graphic pattern, the one or more secondary graphic pattern being defined by combining the plurality of graphics patterns together in the main scanning direction,

and that generates, based on the one or more secondary drawing command, drawing data to be used for forming the one or more secondary graphic pattern while scanning in the main scanning direction (Col. 12, lines 56-65; Col. 22, lines 14-24).

16. With regard to Claim 21, Claim 21 is similar in scope to Claim 3, and therefore is rejected under the same rationale.

17. With regard to Claim 22, Takahashi discloses that the storage portion is also prestored with a predetermined second reference value that is greater than the first reference value, and wherein each secondary graphic pattern has a width in the main scanning direction that is larger than the first reference value and that is smaller than or equal to the second reference value, wherein the second reference value is previously determined dependently on the transfer condition (Col. 3, lines 6-10, 48-67; Col. 4, lines 20-28; Col. 12, lines 10-22; Col. 23, lines 45-60).

18. Thus, it reasonably appears that Takahashi describes or discloses every element of Claims 1-8, 14, 15, and 20-22 and therefore anticipates the claims subject.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US006359695B1) in view of Tsunekawa (US006348975B1).

22. With regard to Claim 9, Takahashi is relied upon for the teachings as discussed above relative to Claim 8. Takahashi discloses that the drawing data generation means generates the drawing data (Col. 3, lines 10-21).

However, Takahashi does not teach a cache memory and transferring the generated drawing data between the cache memory and the drawing data storage area. However, Tsunekawa discloses a cache memory (Col. 10, lines 22-27), the drawing data generation means

generating the drawing data (Col. 19, lines 41-43) while transferring the generated drawing data between the cache memory and the drawing data storage area (Col. 10, lines 22-27).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Takahashi to include a cache memory and transferring the generated drawing data between the cache memory and the drawing data storage area as suggested by Tsunekawa because Tsunekawa suggests the advantage of storing data in the cache so that the data in the cache can be reused without retrieving it from the memory again, which results in faster processing (Col. 10, lines 2-7).

23. With regard to Claim 10, Takahashi does not teach that the drawing data storage area has a plurality of record areas, and the cache memory has several record areas, each record area in the drawing data storage area having a record length equal to that of each record area in the cache memory, data transfer being executed between the main storage device and the cache memory by successive data units, each data unit having a data amount corresponding to the record length, the first reference value being previously determined dependently on a data amount corresponding to the record length. However, Tsunekawa discloses that the drawing data storage area has a plurality of record areas, and the cache memory has several record areas, each record area in the drawing data storage area having a record length equal to that of each record area in the cache memory, data transfer being executed between the main storage device and the cache memory by successive data units, each data unit having a data amount corresponding to the record length, the first reference value being previously determined dependently on a data amount corresponding to the record length (*font pattern 406 is formed*

from scalable font data on the basis of character size, Col. 2, lines 13-16; form image was compressed, Col. 4, lines 22-28; cache function such that whether the form raster corresponding to the request form data has already been stored or not is discriminated, Col. 10, lines 2-7, cache memory to cache a character pattern developed on the basis of scalable data in the font ROM 604, Col. 7, lines 22-27; when the character pattern to be printed is not found in the font cache, data is read out from the font ROM 604, Col. 19, lines 55-62).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Takahashi so that the drawing data storage area has a plurality of record areas, and the cache memory has several record areas, each record area in the drawing data storage area having a record length equal to that of each record area in the cache memory, data transfer being executed between the main storage device and the cache memory by successive data units, each data unit having a data amount corresponding to the record length, the first reference value being previously determined dependently on a data amount corresponding to the record length as suggested by Tsunekawa because Tsunekawa suggests that it is advantageous to limit the record length since a memory of a large capacity is needed to hold the form image of one page (Col. 4, lines 22-28). The advantages of using a cache were discussed in the rejection for Claim 9.

24. With regard to Claim 11, Takahashi discloses that the storage means is also prestored with a predetermined second reference value that is greater than the first reference value, and wherein each secondary graphic pattern has a width in the main scanning direction that is larger than the first reference value and that is smaller than or equal to the second reference value, the

second reference value being smaller than or equal to a width corresponding to the record length (Col. 12, lines 10-22; Col. 23, lines 45-60).

25. With regard to Claim 12, Takahashi does not teach that the cache memory has a data capacity, the first reference value being previously determined dependently on a data amount corresponding to the data capacity. However, Tsunekawa discloses that the cache memory has a data capacity, the first reference value being previously determined dependently on a data amount corresponding to the data capacity (Col. 10, lines 22-24; Col. 2, lines 13-16; Col. 19, lines 49-54).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Takahashi so that the cache memory has a data capacity, the first reference value being previously determined dependently on a data amount corresponding to the data capacity as suggested by Tsunekawa because Tsunekawa suggests that the data needs to be scaled to the size of the cache memory in order to store the data in the cache memory (Col. 10, lines 22-24; Col. 2, lines 13-16). The advantages of using a cache were discussed in the rejection for Claim 9.

26. With regard to Claim 13, Claim 13 is similar in scope to Claim 11, except that Claim 13 has the additional limitation that the second reference value being smaller than or equal to a width corresponding to the data capacity. Takahashi does not teach that the second reference value being smaller than or equal to a width corresponding to the data capacity. However, Tsunekawa discloses that the second reference value being smaller than or equal to a width

corresponding to the data capacity (Col. 10, lines 22-24; Col. 2, lines 13-16; Col. 19, lines 49-54). This would be obvious for the same reasons given in the rejection for Claim 12.

27. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US006359695B1) in view of Hoshi (US006374033B2).

28. With regard to Claim 16, Takahashi is relied upon for the teachings as discussed above relative to Claim 8. Takahashi discloses that the drawing data generation means accesses each storage portion in the drawing data storage area of the main storage device by designating a row address and a column address of the each storage portion, the drawing data generation means accessing a plurality of successive storage portions having a single row address by designating a single column address once (Col. 23, lines 45-60; Col. 24, lines 56-65; Col. 25, lines 32-42).

However, Takahashi does not teach that the drawing data generation means accesses during a burst mode, and the plurality of successive storage portions being defined in a storage area having one burst length, and wherein the first reference value is previously determined dependently on a data amount corresponding to the one burst length. However, Hoshi discloses that the drawing data generation means accesses during a burst mode, and the plurality of successive storage portions being defined in a storage area having one burst length, and wherein the first reference value is previously determined dependently on a data amount corresponding to the one burst length (Col. 2, lines 7-19).

It would have been obvious to one ordinary skill in the art at the time of invention by applicant to modify the device of Takahashi so that the drawing data generation means accesses

during a burst mode, and the plurality of successive storage portions being defined in a storage area having one burst length, and wherein the first reference value is previously determined dependently on a data amount corresponding to the one burst length as suggested by Hoshi because Hoshi suggests the advantage of attaining a cost reduction and down-sizing of the entire device by reducing memories (Col. 1, lines 45-48; Col. 2, lines 7-19).

29. With regard to Claim 17, Claim 17 is similar in scope to Claim 11, except that Claim 17 has the additional limitation that the second reference value being smaller than or equal to a width corresponding to the burst length. Takahashi does not teach that the second reference value being smaller than or equal to a width corresponding to the one burst length. However, Hoshi discloses that the second reference value being smaller than or equal to a width corresponding to the one burst length (Col. 2, lines 7-19). This would be obvious for the same reasons given in the rejection for Claim 16.

30. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US006359695B1) in view of Date (US006708236B1).

31. With regard to Claim 18, Takahashi is relied upon for the teachings as discussed above relative to Claim 8. Takahashi discloses a data bus (12, Figure 3) connected between the drawing data generation means (1022; Col. 9, lines 50-53) and the main storage device (1013) (Col. 9, lines 38-40, 62-64).

However, Takahashi does not teach that the first reference value is previously determined dependently on a width of the data bus. However, Date discloses that the first reference value is previously determined dependently on a width of the data bus (Col. 1, lines 46-48).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Takahashi so that the first reference value is previously determined dependently on a width of the data bus as suggested by Date because Date suggests that if the data does not match the bus width, this would decrease the bus transfer speed (Col. 1, lines 36-39).

32. With regard to Claim 19, Claim 19 is similar in scope to Claim 11, except that Claim 19 has the additional limitation that the second reference value being smaller than or equal to a width corresponding to the width of the data bus. Takahashi does not teach that the second reference value being smaller than or equal to a width corresponding to the width of the data bus. However, Date discloses that the second reference value being smaller than or equal to a width corresponding to the width of the data bus (Col. 1, lines 46-48). This would be obvious for the same reasons given in the rejection for Claim 18.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joni Hsu whose telephone number is 571-272-7785. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JH


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